A NEW VITEX FROM MALAYSIA

by

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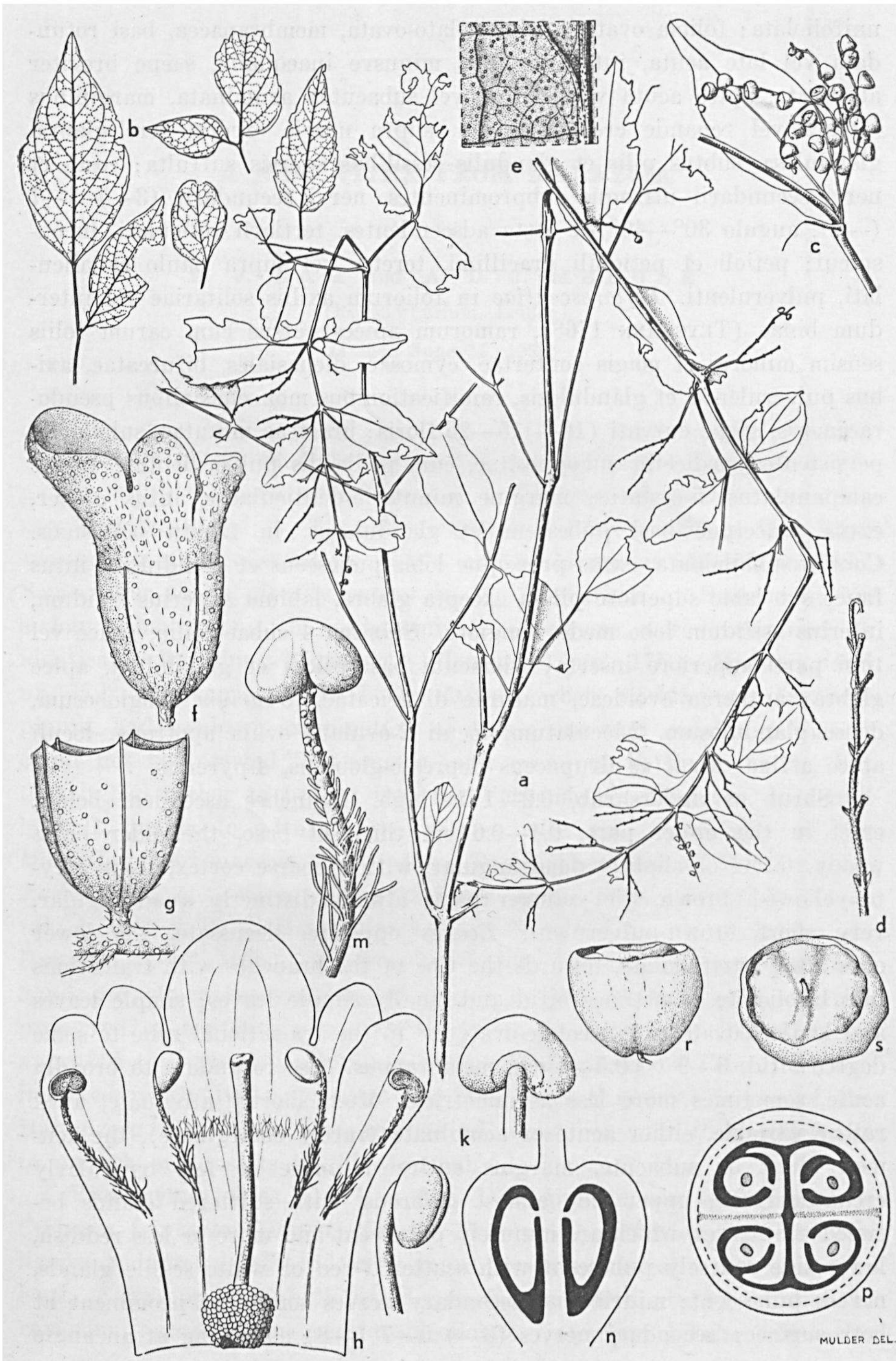
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In 1919 Dr C. A. BACKER collected a plant in the Kangean Archipelago which had the appearance of a *Cymaria* so that the collector provisionally called it "*Cymaria triphylla* BACKER" (MS.). The same species was also collected by KARTA on the Island of Bawean in 1928. Some other sheets already extant in the Herbarium at Buitenzorg for a long time among the indeterminate specimens were recognized as identical with this "*Cymaria*" (TEYSMANN nr. 1750, Madoera and nr. 1768, Bawean). In 1937 Dr BACKER, when working up Javanese plants, had a closer examination of this plant and concluded that it could not be inserted in *Cymaria,* and even not in the Labiatae, but that it had rather to be put into the Verbenaceae. However, he found himself unable to identify the species with the monograph of the Malaysian Verbenaceae (H. J. LAM, The Verbenaceae of the Malayan Archipelago, etc., Groningen 1919), nor in the revision of that family (H. J. LAM & R. C. BAKHUIZEN VAN DEN BRINK, Bull. du Jard. bot. de Buitenz., III, **3**, 1921). He therefore kindly put the specimens into our hands for closer examination. Moreover, a part of the alcohol material preserved at Buitenzorg was kindly put at our disposal. The material appeared to represent a hitherto undescribed species of *Vitex.* We are indebted to Dr BACKER and to Dr D. F. VAN SLOOTEN, Keeper of the Buitenzorg Herbarium, for their kind assistance and their allowance to publish our results in this Journal.

Vitex cymarioides H. J. LAM et A. D. J. MEEUSE, nov. spec., *Fig. 1* — *Cymaria triphylla* BACKER. MS. — Frutex vel suffrutex; rami subtus lignosi, subteretes, adscendentes, supra quadrangulares, erecti, pulverulenti. *Folia* opposita phyllotaxi decussatae, inferiora semper trifoliolata, ramorum apices versus sensim bifoliolata, interdum bifida, ultimatim

unifoliolata; foliola ovata vel lanceolato-ovata, membranacea, basi rotundata vel late acuta, interdum plus minusve inaequalia, saepe breviter attenuata, apice acuta vel (obtuse vel subacute) acuminata, marginibus integra vel repande crenato-serrata, supra nervis excepti fere glabra, glandulosa, subtus pilis et glandulis sessilibus sparsis suffulta; costa et nervi secundarii utrinque subprominentes, nervi secundarii (3—) 5—7 (—8), angulo 30°—40° de costa adscendentes, tertiarii reticulati, inconspicui; petioli et petioluli gracillimi, teretes vel supra paulo canaliculati, pulverulenti. *Inflorescentiae* in foliorum axillis solitariae vel interdum binae (TEYSMANN 1768), ramorum apices versus cum earum foliis sensim minores et magis confertae, cymosae, dichasiales, bifurcatae, axibus pulverulentis et glandulosis, ramificationibus monochasialibus pseudoracemosis, saepe curvati (10—)15—25-floris; bracteae minutae, subulatae, persistentes, pedicellis suboppositae, cum pedicellis pulverulentae. *Calyx* campanulatus, 5-costatus, margine minute 5-denticulatus, intus glaber, extus praecipue basi pubescens et glandulosus, in fructu persistens. *Corolla* subbilabiata, extus praecipue lobis pubescens et glandulosa, intus fauce sub labio superiore pilosa excepta glabra, labium superius bifidum, inferius trifidum lobo medio longiore. *Stamina* 4 subaequalia, fauce vel tubi parti superiore inserta; filamenta basi pilosa et glandulosa, apice glabra; antherae ovoideae, maturae divaricatae. *Ovarium* subglobosum, dense glandulosum, 2-loculatum, loculi 2-ovulati, ovula apotropa, loculi apice affixa. *Fructus* drupaceus depresso-globosus, 4-pyrenus.

Shrub or undershrub, 0.2—1 m high. Branches ascendent below, erect in the upper part, 0.4—0.6 cm thick at base, the older parts woody, terete or slightly quadrangular, with a coarse cortex, light grey- to yellowish brown, the younger parts always distinctly quadrangular, very short brown-pulverulent. *Leaves* opposite, decussate, the lower ones always trifoliolate, towards the tips of the branches with transitions into bifoliolate, sometimes bifid and finally simple leaves; simple leaves and leaflets ovate to lanceolate-ovate, or in the transitional zone to some degree bifid, 3—9 × 0.5—4 cm, membranous, base rotundate to broadly acute, sometimes more less asymmetrical, often shortly attenuate, apex rather variable, either acute or acuminate (rarely emarginate), the acumen blunt or subacute, margins entire or more or less irregularly crenate-serrate; upper side almost glabrous, with scattered glands between the nerves, which are minutely pubescent and more or less reddish, lower side sparsely pubescent with scattered red or white sessile glands, nerves pubescent; midrib and secondary nerves somewhat prominent at both surfaces, secondary nerves (3—) 5—7 (—8) ascending at an angle


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of 30°—40°, tertiary nerves reticulate, almost inconspicuous; petioles and petiolules brown, very slender, terete or slightly furrowed above, pulverulent, 1.7—5 cm long, petiolules of the terminal leaflets 0.5—2 cm, those of the lateral ones 0.1—0.4 (—0.6) cm long. *Inflorescences* single or more rarely (TEYSMANN 1768) two in the leaf-axils, 1.5—5 (—6) cm long, towards the tips of the branchlets gradually smaller, as are the leaves, and somewhat closer together, cymose, dichasial, bifurcate, the axes and pedicels pulverulent and with scattered glands, the two terminal ramifications monochasial, pseudoracemose, usually curved, bearing (10—) 15—25 flowers; peduncles (0.5—) 1—1.3 cm long; bracts subulate persistent, subopposite the pedicels, about 0.05 cm long, pulverulent and glandular as are the pedicels which are 0.05 cm long. *Calyx* campanulate, green in a living state, brown when dry, 0.15—0.17 cm long, 0.1—0.13 cm broad, 5-ribbed, the rim with 5 very short blunt teeth at the end of the ribs, glabrous within, at base pubescent and glandular as are the pedicels, almost glabrous and without glands towards the rim, in fruit persistent and membranous, light brown, semi-globose, and subtruncate, 0.15—0.2 × 0.9—1.6 cm. *Corolla* zygomorphous, indistinctly bilabiate, the tube about 0.2 cm long, the upper lip light yellow, 0.1 cm, consisting of two oblong-ovate lobes, lower lip 3-lobed, the middle lobe larger, orbiculate, 0.17 cm in diam., white with a yellow base, the lateral ones smaller (but larger than the lobes of the upper lip), ovate, 0.12 cm long, pale yellow; tube and lobes pubescent and glandular without, the glands more crowded towards the tips of the lobes, glabrous inside, except a narrow strip in the throat at the base of the lower lip. *Stamens* 4, subequal, inserted in the throat or in the upper half of the corolla tube, hardly or not exsert, filaments light yellow, densely pilose and with glandular hairs at base, glabrous towards the tips, anthers brown, ovoid, when ripe divaricate below, dehiscing with a large ovate slit. *Ovary* subglobose, entirely covered with glands, 2-celled, each cell with two ovules, inserted at the angles of the carpel margins, which are curved inward and in the upper part of the cell, descendant, apotropous; style filiform with two very short rounded stigmata, 0.23 cm long (ovary inclusive). *Fruit* drupaceous,

Fig. 1 — *Vitex cymarioides*, n. sp. — *a.* habit; *b.* leaf-types; *c.* infrutescences; *d.* part of inflorescence without flowers so as to show pedicels and bracts; *e.* part of lower side of leaf; *f.* flower; *g.* calyx; *h.* flower, inside; *k.* anthers; *m.* stamen; *n.* ovary, longitudinal section; *p.* ditto, cross-section; *r.* fruit, side-view; *s.* ditto, top view. — after type specimen, except *c.* (KARTA 28).

depressedly globose, 0.15—0.2 cm in diam., 0.1—0.17 cm high, grey-brown, glandular, exsert from the persistent calyx, with 4 pyrenes, brown and very hard when dry. All colour indications f. BACKER.

Distribution.

JAVA, Madoera, Goenoeng Geger: TEYSMANN 1750 (Herb. Buitenzorg), nat. name: meneer-meneeran — Bawean, Goenoeng Toenggangan: KARTA 28 (Herb. Buitenzorg, Herb. Leiden), fr. on 6. 5. 1928, nat. name: rokoh-rokoh; without further indication of locality: TEYSMANN 1768 (Herb. Buitenzorg) — Kangean Archipelago, Poeloe Sepandjang, 1 m alt., in heterogeneous forest on heavy black soil behind the tidal forest, frequent, often consociately growing: BACKER 28867 (*Type specimen* in Herb. Leiden; paratypes in Herb. Leiden, Buitenzorg, Kew, Paris and Manilla), fl. and fr. on 21. 4. 1919.

Remarks. Vitex cymarioides strikingly resembles *Cymaria acuminata* DECNE. (*Labiatae-Ajugoideae*) from E. Java, Timor, Celebes, Mindanao and Luzon, particularly in its general habit (small shrub) and in the shape of the leaves and of the inflorescences, the extremely monochasial branches of which are quite unusual for the Verbenaceae. It therefore seems to be one of the most perfect links between the Labiatae and the Verbenaceae (in the orthodox delimitation of these families), thusfar known. In his important study on these closely related orders, JUNELL[1]) stated (l. c., pp. 210—213), that there is hardly a single feature or a combination of features to be found, by which the two families can be separated, except perhaps on the basis of the placentation, with which differences in the morphology of the inflorescences seem to be correlated. JUNELL's subdivision of the Verbenaceae-Labiatae is based upon the following points: *Verbenaceae* (new style): ovules attached at the margins of the carpels; inflorescences racemose (this delimitation include the former Verbenaceae-Verbenoideae; the tribus Stilboideae is raised to the rank of the natural order Stilbinaceae). *Labiatae* (new style): ovules attached at the inner surface of the carpels; inflorescences cymose (this delimitation comprises the former Labiatae and the Verbenaceae-Viticoideae, -Caryopteridoideae, -Symphoremoideae and -Avicennioideae). It seems to us that the placentation hardly yields a sufficient character for a family-distinction; it might rather be suitable for distinguishing subfamilies, or even smaller units, as the nature of the placentation feature implies the possibility that transitional forms between the two types may still be found. As far as the inflorescences are concerned, these yield a character which perhaps seems to be both

[1]) S. JUNELL, Zur Gynäceummorphologie und Systematik der Verbenaceen und Labiaten. Symb. Bot. Ups. 4, 1934.

somewhat more settling and — which is also important in practical classification — also more easily to be examined. However, there is one point in the delimitation of the whole group, which seems to have remained insufficiently stipulated thusfar; that is that we may distinguish between a group comprising mainly herbs, undershrubs or small shrubs (Labiatae, Verbenaceae-Verbenoideae) and another, including mainly large shrubs, lianas or trees (the other tribes of the Verbenaceae, old style). We do not mean to say that this feature may be used as a basis of a subdivision, as it would be certainly easy to indicate a number of transitional forms. We would only emphasize that this apparently natural subdivision, which is comparable with HUTCHINSON's subdivision of the Polycarpicae (The Families of Flowering Plants, I, 1926) and with such a relation as exists between the Umbelliferae and the Araliaceae, leads to a subdivision, which is almost a counterpart to that of JUNELL; it seems to be correlated with the characters: leaf margins entire or serrate: 1. *Herbs* and small shrubs, with mostly *serrate* leaf margins: Labiatae (old style), Verbenaceae-Verbenoideae, 2. Large shrubs, lianas and *trees* with usually *entire* leaf margins: the other tribes of the Verbenaceae (old style), except the Stilboideae (separate family).

This only confirms the very close relations between the two families (old style).

Returning to *Vitex cymarioides* it may be stated that its principal characteristics are of the following nature:

Feature	Resemblance
Habit	Verbenaceae-Verbenoideae Labiatae in general *Cymaria* (Lab.)
Leaves	
trifoliolate	*Vitex*
simple	Labiatae; some *Vitex* species e. g. *V. trifolia* L.
margins	Labiatae; in *Vitex* serrate leaves are very rare
Inflorescences	*Cymaria acuminata* DECNE; a slight tendency to monochasial lateral ramifications is found in some East-African *Vitex*-species (specifically unidentified in Herb. Leiden), somewhat stronger in *Vitex siamica* WILLIAMS from Siam and Malaya, which by transitional forms obviously shows that these monochasia have to be considered as reduced dichasia. A similar tendency may

to some extent also be found in *Amethystea coerulea* L. (Labiatae-Ajugoideae; holarctic).

Flower *Vitex*

Fruit *Vitex*

This combination of features makes the creation of a new genus (intermediate between *Cymaria* and *Vitex*) both unnecessary and undesirable, since the only generic point of distinction would be its habit. The fact, however, that it is, as far as we know, by far the smallest and the least woody *Vitex*, makes us inclined to return to the opinions of BRIQUET of BAILLON (quoted in JUNELL, l. c.) that the old style Verbenaceae and Labiatae have perhaps better to be considered as subfamilies of the same natural order, with the modification that these subfamilies should correspond with JUNELL's delimitation.